

b2 coverage are of more than one hundred square feet located on one side of the
sprinkler in an amount and with a distribution effective to control an ordinary
hazard fire in the coverage area.

In the Drawings

Please permit the addition of the following references with lead lines as listed below, and as shown in red on the attached three photocopies of the relevant figures.

Fig. 1: addition of line "2-2" and reference number "27";

Fig. 2: change reference character "32f" to "32b";

Fig. 3: add reference character "44a";

Fig. 7: add characters "A-A" and reference numbers "22" and "24";

Fig. 12: add reference characters "86" and "88";

Fig. 13: add reference characters "80", "82", and "84";

Fig. 14: add reference characters "F", "L" and "W".

REMARKS

With the entry of this Amendment, claims 1-16, as amended, remain pending.

It is respectfully submitted that the proposed amendments to Figs. 1-3, 7, and 12-14 overcome the bases for the Examiner's objections to the drawings.

It is respectfully submitted that the amendments to the specification overcome the bases of the Examiner's objections to the specification for informalities. Additionally, as required by the Examiner, an Abstract Of The Disclosure has been added and is being submitted herewith on a separate sheet.

Claims 1-16 were rejected under 35 U.S.C. § 112, Second Paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicants regard as the invention. Applicant respectfully traverses this rejection. Claim 1 has been amended to change "extended coverage to a sidewall automatic fire sprinkler" to "extended coverage sidewall automatic fire sprinkler." Additionally, claims 6, 10, 11, and 13 were rejected for inconsistencies regarding claimed ranges. Appropriate correction has been made to each of these claims. Further, claim 14 was rejected based upon lack of antecedent basis for "said ceiling sprinkler." Appropriate correction has been made. Accordingly, reconsideration and withdrawal of the indefiniteness rejection of claims 1-16 are respectfully requested.

The Examiner also rejected claims 1-16 under 35 U.S.C. §103 as being unpatentable over Meyer *et al.* ("Meyer") in view of Fischer. The rejections of claims 1-16 over the combination of Meyer in view of Fischer are traversed on the grounds that the Examiner has not provided an adequate basis for the selection of a K-factor greater than 9 for use in an extended coverage sidewall automatic fire sprinkler. Although Meyer discloses a K-factor that is greater than 9 and up to about 15, it does so in the context of extended coverage automatic ceiling sprinklers, and such disclosure does not mean that the mentioned K-factors are suitable for all sprinkler uses. The design choice of a K-factor greater than 9 in the sidewall sprinkler of the above-captioned application is more limited than suggested by the Examiner. In particular, the larger K-factors mentioned in Meyer were considered suitable only for use in ceiling sprinklers, not sidewall sprinklers, inasmuch as it was believed that higher operating pressures (which correspond with lower K-factors) were required for effective dispersion over the coverage area using sidewall sprinklers. In support of the traversal, a photocopy of the Declaration of James Golinveaux is presented. The originally executed copy will be forwarded after receipt by the undersigned representative.

It is respectfully submitted that one of ordinary skill in the art, who is one who

would have been knowledgeable of the automatic sprinkler art at the time the invention was made, would have known that, generally, "extended coverage" sprinklers, including extended coverage sidewall sprinklers, have been allowed since 1973 based upon. Further, those of ordinary skill in the art would have known during the relevant period that in 1983, the technical committee of NFPA-13 amended Section 1-2 to add the following sentence: "Nothing in this standard is intended to restrict new technologies or alternate arrangements, providing the level of safety prescribed by the standard is not lowered." Based on the addition of this sentence to Section 1-2, new technologies such as larger sprinkler orifice sizes and, accordingly, higher K-factors, could be tested for use in sprinklers. However, on information and belief, no manufacturer or any other entity other than the assignee of the above-captioned application, tested or developed an orifice size larger than 17/32 inches and a K-factor greater than 8.0 for a sidewall sprinkler. There was no evidence prior to the demonstration of Applicants' invention that the use of larger orifices and resulting lower minimum pressures would have provided a sidewall sprinkler that could effectively fight a fire. (Golinveaux Decl. ¶ 9)

During the relevant period, those of ordinary skill in the art believed that higher water pressures were required to project a spray pattern over an extended coverage area as stated in claim 1 using sidewall sprinklers. Those of ordinary skill in the art correlate higher pressures with lower K-factors, as opposed to the higher K-factors recited in the claims. The operating pressures for sprinklers having a K-factor greater than 9 is significantly lower than that of the previous industry standard sidewall sprinklers, which have an orifice size of 17/32 inches and a K-factor of 8.0. Thus, notwithstanding that K-factors greater than 9, as claimed in the above-captioned application, were acceptable for use since 1983 (based on the above-stated change to NFPA-13), those of ordinary skill in the art believed that because sidewall sprinklers required

higher operating pressures than ceiling sprinklers, such higher K-factors would not work for sidewall sprinklers. Thus, it would not have been obvious to one of ordinary skill in the art to employ a K-factor greater than 9 in a sidewall sprinkler as it was contrary to custom and understanding in the industry. Accordingly, on information and belief, the named inventors of the above-captioned application were the first to test and develop a sidewall sprinkler capable of achieving a spray pattern of water droplets dispersed over a generally horizontal, generally rectangularly-shaped extended coverage area of more than one hundred square feet using a K-factor greater than 9. (Golinveaux Decl. ¶ 10)

Given the foregoing that would have been known by one of ordinary skill in the art during the relevant time period, one of ordinary skill in the art would have selected a K-factor no greater than 8.0 for sidewall sprinklers, the maximum that had been shown and therefore believed effective for providing extended coverage in sidewall sprinklers. (Golinveaux Decl. ¶ 11)

With regard to the Examiner's reliance on Meyer, such reliance is misplaced. As stated above, Meyer discloses only an extended coverage ceiling sprinkler, rather than a sidewall sprinkler. This distinction is significant, based on the understanding of those of ordinary skill in the art during the relevant time period, as discussed above. Thus, although Meyer describes a sprinkler having a K-factor greater than 9 and up to about 15, it does so in a context which was believed by those of ordinary skill in the art to be inapplicable to sidewall sprinklers. (Golinveaux Decl. ¶ 12). Significantly, notwithstanding that Fischer describes a sidewall sprinkler, no mention is made of a K-factor in that reference. (Golinveaux Decl. ¶ 13) Thus, the art, when considered as a whole, neither teaches nor suggests the suitability of the sprinklers of either Meyer or Fischer for application as a sidewall sprinkler having a K-factor greater than 9.

The Examiner's at least implied assertion that a K-factor of greater than 9 was accepted by the art as suitable for all sprinkler uses generally merely because it was mentioned in the Meyer patent is unsupported. Rather, the art teaches only that K-factors greater than 9 and up to about 15 were generally accepted for ceiling sprinklers. The Examiner has not provided any reasoning why one of ordinary skill in the art would select a K-factor greater than 9, when it was universally recognized by the industry that sidewall sprinklers required higher operating pressures which were understood to be achievable only using K-factors up to 8.0. (Golinveaux Decl. ¶ 14)

As a further demonstration of non-obviousness, commercial embodiments of the sidewall sprinkler claimed in the above-captioned application have been a commercial success based on sales and acceptance in the industry. Building owners and end users have significantly benefited from these commercial embodiments insofar as the sprinklers permit flexibility in designs and protection of ordinary hazard areas from the wall where ceiling sprinklers would be undesirable or impractical. (Golinveaux Decl. ¶ 15)

It is respectfully submitted that all of the foregoing constitutes at least a prima facie showing of the movement of those skilled in the art in a different direction from the claimed invention in support of the non-obviousness of the invention.

Further, it is respectfully submitted that pending claims 1-16 distinguish over that which has been cited as prior art with respect to those particularly claimed inventions.

For the foregoing reasons and in view of the present Amendment, reconsideration and withdrawal of the objections to the drawings and specification and of the rejections of claims

1-16 and allowance of the Application and all currently pending claims 1-16 are respectfully requested.

Respectfully submitted,

STEVEN J. MEYER ET AL.

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(date)

By: John Jamieson Jr by K. H. Feld
JOHN JAMIESON, JR.
Registration No. 29,546
AKIN, GUMP, STRAUSS, HAUER & FELD, L.L.P.
One Commerce Square
2005 Market Street, 22nd Floor
Philadelphia, PA 19103-7086
Telephone: (215) 965-1310
Facsimile: (215) 965-1210
E-mail: jjamieson@akingump.com

MGB/KRH